

## CLAIMS

5 1. A system for threading heterogeneous items of electronic communication into a post-response metaphor within context of a process, comprising:

means for interfacing with a plurality of external communication systems of varying type;

10 a server, said server operative to create records that uniquely identify and link communication items created by a plurality of users within any of said external communication systems whereby a threaded trail of collaborative communication is created; and

15 means for associating said threaded trail with any of a process and a process step.

20 2. The system of Claim 1, wherein said means for interfacing with said external communication systems comprises a threading connector API (application programming interface), said threading connector API operative to build connectors to said external communication systems.

3. The system of Claim 2, wherein said connectors define methods for interacting with said external communication systems.

25 4. The system of Claim 3, wherein said methods include:  
creating a new item;  
deleting an existing item;  
viewing an item;  
editing an item; and  
30 creating a placeholder for a future item.

5. The system of Claim 3, wherein a connector accepts a request for an action from within said system and initiates said requested action in one of said external systems.

6. The system of Claim 2, said server comprising a threading server, said record including:

a unique ID;  
title;  
description;  
type;  
original post ID;  
parent ID; and  
item data.

7. The system of Claim 6, wherein item data comprises a marker or string passed to a native external system for the purpose of interacting with the item.

8. The system of Claim 7, wherein said items of communication are stored within the external system from which they originate.

9. The system of Claim 6, wherein said connectors are registered on said threading server.

10. The system of Claim 6, wherein said means for associating said threaded trail with any of a process and a process step comprises a process context, said process context including one or both of:

a process ID;  
a process step ID; and  
means for associating process contexts with records.

11. The system of Claim 10, wherein all records associated with a common root are linked to form a thread, and wherein each thread relating to

a particular process context is associated with the particular process context.

12. The system of Claim 10, wherein records are stored in a first table, and process contexts are stored in a second table, said means for associating process contexts with records comprising means for associating at least one entry in said first table with at least one entry in said second table.

13. The system of Claim 9, wherein registering a connector comprises providing:

- name of a communication type to be registered;

- a description of said type to be registered;

- at least one class that implements said connector of said type to be registered through a client;

- at least one image file to designate items of said type to be registered within a user interface of said client; and
- optionally, network address of a server for said type to be registered.

14. The system of Claim 9, wherein said threading server provides a listing of registered communication types.

15. The system of Claim 2, further comprising a persistent data store for said records, said persistent data store in communication with said server.

16. The system of Claim 15, wherein said persistent data store comprises one of:

- a relational database;

- an object-oriented database; and

- custom-formatted files.

17. The system of Claim 15, wherein accesses to said persistent data store are mediated through a standard API.

18. The system of Claim 2, further comprising at least one client.

19. The system of Claim 18, wherein said client comprises:

a servlet component instantiated on a web server, said servlet component providing a link between said server and a web browser.

20. The system of Claim 18, wherein said client comprises an intranet application.

21. The system of Claim 18, said client including a user interface, wherein said user interface displays a process and its individual steps, said threaded trails of communication associated with said process or a process step.

22. The system of Claim 21, said user interface comprising means for:  
creating a new post;

viewing a list of posts and responses in order of creation;

searching posts and responses according to user-defined criteria;

viewing a list of all responses to a given post as a collapsible

hierarchy;

opening and viewing an item;

creating a new response for any given post or response;

deleting a post/response item;

viewing detailed information related to a post/response item; and

creating a placeholder for a future item;

wherein a user performs operations within context of said process or process step.

23. The system of Claim 22, wherein a post/response item can only be deleted by creator of said item or a system administrator.

24. A method of threading heterogeneous items of electronic communication into a post-response metaphor within context of a process, comprising the steps of:

providing means for interfacing with a plurality of external communication systems of varying type;

providing a server;

creating records on said server that uniquely identify and link communication items created by a plurality of users within any of said external communication systems;

creating a threaded trail of collaborative communication according to said links; and

associating said threaded trail with any of a process and a process step.

25. The method of Claim 24, wherein said means for interfacing with said external communication systems comprises a threading connector API (application programming interface), said method further comprising the step of:

building connectors to said external communication systems by means of said threading connector API.

26. The method of Claim 25, wherein said building step comprises the step of:

defining methods for interacting with said external communication systems.

27. The method of Claim 25, wherein said defined methods include:

creating a new item;

deleting an existing item;

viewing an item;

editing an item; and

creating a placeholder for a future item.

28. The method of Claim 25, further comprising the steps of;  
accepting a request by a connector for an action from within said  
system; and  
initiating said requested action in one of said external systems.

29. The method of Claim 25, said server comprising a threading server,  
said record including:  
a unique ID;  
title;  
description;  
type;  
original post ID;  
parent ID; and  
item data.

30. The method of Claim 29, wherein item data comprises a marker or  
string passed to a native external system for the purpose of interacting with  
the item.

31. The method of Claim 25, further comprising the step of:  
storing said items of communication within the external system from  
which they originate.

32. The method of Claim 25, further comprising the step of  
registering said connectors on said threading server.

33. The method of Claim 25, wherein said step of associating said  
threaded trail with any of a process and a process step comprises the steps  
of  
providing a process context, said process context including one or  
both of:

a process ID;  
a process step ID; and

associating process contexts with records.

34. The method of Claim 33, further comprising the step of:  
linking all records associated with a common process context to form  
5 a thread.

35. The method of Claim 33, wherein said step of associating process  
contexts with records comprises the steps of:  
storing records in a first table;  
10 storing process contexts in a second table; and  
associating process contexts and records such that at least one entry  
in said first table is associated with at least one entry in said second table.

36. The method of Claim 32, wherein registering a connector comprises  
15 any of the steps of providing:  
name of a communication type to be registered;  
a description of said type to be registered;  
at least one class that implements said connector of said type to be  
registered through a client;  
20 at least one image file to designate items of said type to be registered  
within a user interface of said client; and  
optionally, network address of a server for said type to be registered.

37. The method of Claim 32, further comprising the step of;  
25 providing a listing of registered communication types by said  
threading server.

38. The method of Claim 32, further comprising the step of:  
providing a persistent data store for said records and said process  
30 contexts, said persistent data store in communication with said server.

39. The method of Claim 38, wherein said persistent data store comprises  
one of:

a relational database;  
an object-oriented database; and  
custom-formatted files.

40. The method of Claim 38, further comprising the step of:  
providing a standard API through which accesses to said persistent  
data store are mediated.

41. The method of Claim 32, further comprising the step of:  
providing at least one client.

42. The method of Claim 41, wherein said client comprises:  
a servlet component instantiated on a web server, said servlet  
component providing a link between said server and a web browser.

43. The method of Claim 41, wherein said client comprises an intranet  
application.

44. The method of Claim 41, said client including a user interface,  
wherein said user interface displays said process and its individual steps,  
said threaded trails of communication associated with said process or  
process step by means of said process contexts.

45. The method of Claim 44, further comprising any of the steps of:  
creating a new post;  
viewing a list of posts and responses in order of creation;  
searching posts and responses according to user-defined criteria;  
viewing a list of all responses to a given post as a collapsible  
hierarchy;  
opening and viewing an item;  
creating a new response for any given post or response;  
deleting a post/response item;  
viewing detailed information related to a post/response item; and



creating a placeholder for an item;  
wherein a user performs operations within context of said process or process step.

5 46. The method of Claim 45, wherein a post/response item can only be deleted by creator of said item or a system administrator.

47. A graphical user interface for displaying and accessing heterogeneous items of electronic communication threaded into a post-response metaphor comprising:  
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a workspace;

an electronic form displayed within said workspace wherein said items of communication are presented in a threaded trail of collaborative communication;  
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means for displaying a process and its component steps,

means for displaying said threaded trail in a context of said associated process or of a step, wherein said trail is associated with said process or step;

means for creating and accessing items of communication by a user;

20 and

means for creating placeholders for future items.

48. The user interface of Claim 47, wherein said threaded trail comprises a root post, and a plurality of related posts arranged in a post-response metaphor, and wherein a response is associated with its parent post, so that posts and responses are displayed in a hierarchy, said root post forming the top level of the hierarchy.  
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49. The user interface of Claim 47, wherein entries on said form comprise records representative of said items of communication, said items of communication externally created and stored.  
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50. The user interface of Claim 47, wherein said means for displaying said process with its component steps comprises a plurality of icons, an icon representative of a step, icons representing the steps of a single process disposed in a common group, said icons integrated within or proximate to said form.

51. The user interface of Claim 50, wherein said records are stored in a first database table and wherein said means for associating a threaded trail with a method or a step of said method comprises a process context, said process context including one or both of a process ID and a step ID, and an association with a record from said first database table, said process contexts stored in a second database table.

52. The user interface of Claim 50, wherein selection of an icon causes a trail associated with the corresponding process step to be displayed on said form.

53. The user interface of Claim 47, wherein said means for creating and accessing said items comprises a plurality of interface elements, wherein activation of an interface element invokes a connector to an external communication system wherein an item is either created or modified.

54. The user interface of Claim 53, wherein a connector comprises a class that defines methods for interacting with said external system.

55. The user interface of Claim 54, wherein user requests are received by said connector and initiated on said external system.

56. The user interface of Claim 54, wherein interacting with said external system includes any of:  
creating a new post;  
viewing a list of posts and responses in order of creation;  
searching posts and responses according to user-defined criteria;

viewing a list of all responses to a given post as a collapsible hierarchy;

opening and viewing an item;

creating a new response for any given post or response;

deleting a post/response item;

viewing detailed information related to a post/response item; and

creating a placeholder for an item;

wherein operations are performed within context of a process or step.

57. The user interface of Claim 47, wherein said means for creating a placeholder comprises means for creating a record for an item of communication in advance of creating said item, so that said record is displayed as a placeholder within said trail.

58. The user interface of Claim 47, said means for displaying a process and its component steps comprising:

a second user interface, said second user interface a user interface to a linked, external application, wherein selection of a process or process step in said second user interface launches said workspace, so that at least one associated threaded trail is displayed.